

REMARKS

Claims 15-19, 29-31, 35, 36, 39-46, 49-54, 57-68, 71-76 and 95-100 are pending in this application, with claims 15, 16, 35, 36, 39 and 40 being independent. Claims 5, 6, 47, 48, 55, 56, 69, 70, 93 and 94 have been cancelled. Independent claims 15, 16, 35, 36, 39 and 40 have been amended. In particular, each of the independent claims has been amended to recite the limitations "forming a semiconductor film containing a rare gas element over the second crystalline semiconductor film" and "performing a heat treatment in a nitrogen atmosphere to remove or reduce the concentration of the metal element in the second crystalline semiconductor film, after forming the semiconductor film containing the rare gas element." Support for the amendments may be found in the application at least at pages 113 to 119 and at Figs. 44A to 44E. As described with respect to a specific exemplary implementation in the specification (i.e., Embodiment 24), the additional steps may improve the characteristics of a device because "the germanium-containing crystalline semiconductor film which is obtained in Embodiment 24 has a high orientation rate with respect to the [101] plane and is fully reduced in the concentration of the metal element in the film, whereby if the film is used as the active layer of the TFT, it is possible to realize superior TFT electrical characteristics." See page 119, lines 6-10. No new matter has been introduced.

Independent claims 15, 16, 35, 36, 39 and 40, and their dependent claims 17, 19, 29, 31, 41, 43, 44, 46, 49-54, 57-68, 71-76 and 95-100, have been rejected as being unpatentable over Burghartz (US 5,461,250) in view of Shimizu (US 5,753,541) or Tsutsu (US 6,118,151). Dependent claims 18, 30, 42 and 45 have been rejected as being unpatentable over Burghartz in view of Shimizu, Tsutsu, Applicant's Admitted Prior Art (AAPA), and Maekawa (U.S. Patent No. 6,066,547). Applicants request reconsideration and withdrawal of the rejections of claims 15, 16, 35, 36, 39 and 40, and their dependent claims, because neither Burghartz, Shimizu, Tsutsu, AAPA, Maekawa, nor any proper combination of the five describes or suggests forming a semiconductor film containing a rare gas element over the recited second crystalline film and then performing a heat treatment in a nitrogen atmosphere to remove or reduce the concentration of a metal element in the second crystalline film.

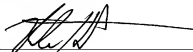
As acknowledged by the Examiner on page 6 of the Final Office Action, Burghartz, Tsutsu, and Shimizu do not describe or suggest introducing a metal element after forming the recited second amorphous silicon film, and, therefore, necessarily do not describe or suggest forming a semiconductor film containing a rare gas element over the second silicon film after it has been crystallized and performing a heat treatment in a nitrogen atmosphere to remove or reduce the concentration of the metal element in the second crystalline film. The Examiner refers to AAPA as teaching a technique for introducing a metal element into an amorphous silicon film. AAPA, however, does not describe or suggest removing or reducing the concentration of the metal element in the silicon film after it has been crystallized by forming a semiconductor film containing a rare gas element and then performing a heat treatment in a nitrogen atmosphere. Maekawa, which is relied upon solely for teaching annealing using a halogen lamp, a Xe arc lamp, and an excimer laser, also fails to describe or suggest these features.

For at least these reasons, applicants request reconsideration and withdrawal of the rejection of claims 15, 16, 35, 36, 39 and 40, and their dependent claims.

Applicants submit that all claims are in condition for allowance.

The fees in the amount of \$810 for the Request for Continued Examination are being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,



Roberto J. Devoto
Reg. No. 55,108

Date: October 30, 2007

Fish & Richardson P.C.
1425 K Street, N.W.
11th Floor
Washington, DC 20005-3500
Telephone: (202) 783-5070
Facsimile: (202) 783-2331